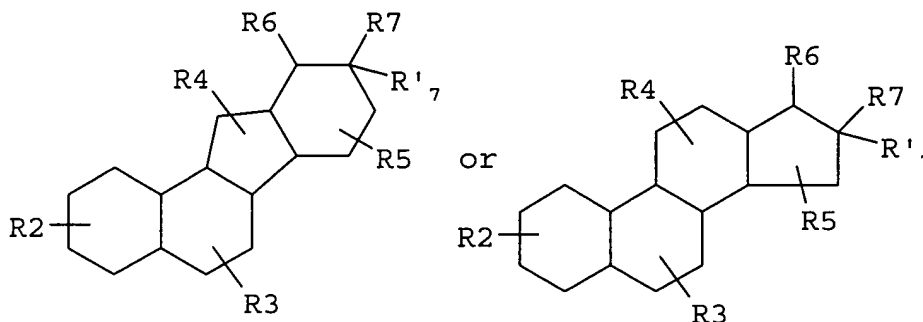


IN THE CLAIMS:

1. (currently amended) A compound represented in the general formulas (I), or unsaturated forms thereof and/or seco-, nor- or homo-derivatives thereof:

Formula I

wherein, as valence and stability permit,

R_2 [[,]] and R_3 , ~~R_4 and R_5~~ , independently for each occurrence, ~~are absent or~~ represent one or more substitutions to the ring to which each is attached, selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, sugar, carbamate, carbonate, or - $(CH_2)_m-R_8$;

R_4 and R_5 , independently for each occurrence, are absent or represent one or more substitutions to the ring to which each is attached, selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, sugar, carbamate, carbonate, or - $(CH_2)_m-R_8$;

R_6 , R_7 , and R'_7 , are absent or represent, independently, halogen, alkyl, alkenyl, alkynyl, aryl, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amine, imine, amide, phosphoryl, phosphonate, phosphine, carbonyl, carboxyl, carboxamide, anhydride, silyl, ether,

thioether, alkylsulfonyl, arylsulfonyl, selenoether, ketone, aldehyde, ester, or $-(CH_2)_m-$
 R_8 , and

either R_6 and R_7 , or R_7 and R'_7 , taken together, form a substituted or unsubstituted ring or polycycle, which includes a tertiary amine in the atoms which make up the ring, wherein, if the ring is formed by R_7 and R'_7 , the tertiary amine contained therein is substituted by an alkyl substituted with a group selected from aryl, aralkyl, heteroaryl, heteroaralkyl, amide, acylamino, carbonyl, ester, carbamate, urea, ketone, sulfonamide, carbocyclyl, heterocyclyl, polycyclyl, ether, halogen, alkenyl, and alkynyl;

R_8 represents an aryl, a cycloalkyl, a cycloalkenyl, a heterocycle, or a polycycle; and

m is an integer in the range 0 to 8 inclusive;

or a pharmaceutically acceptable salt thereof.

2. (original) The compound of claim 1, wherein:

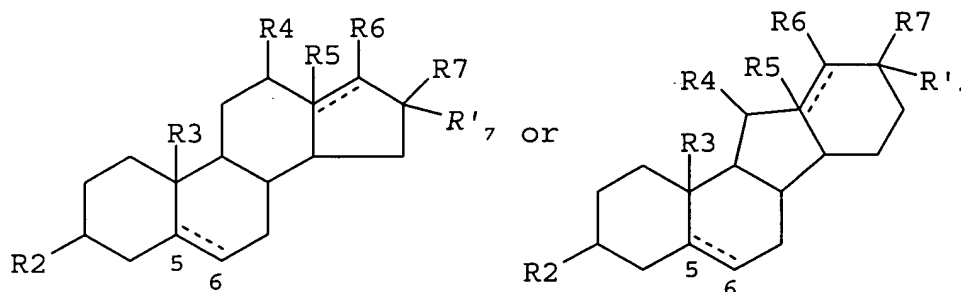
R_2 represents $=O$, sugar, carbamate, ester, carbonate, or alkoxy;

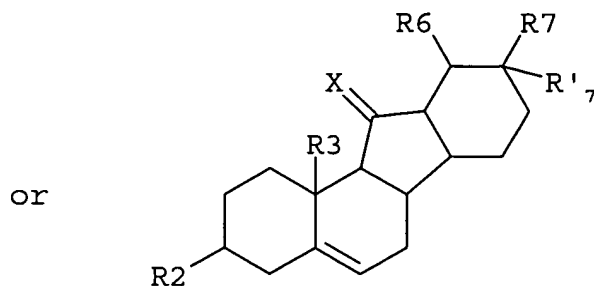
R_3 , for each occurrence, is an $-OH$, alkyl, $-O$ -alkyl, $-C(O)$ -alkyl, or $-C(O)-R_8$;

R_4 , for each occurrence, is absent, or represents $-OH$, $=O$, alkyl, $-O$ -alkyl, $-C(O)$ -alkyl, or $-C(O)-R_8$; and

R_5 , for each occurrence, is absent, or represents $-OH$, $=O$, or alkyl.

3. (currently amended) A compound represented in the general formula (II), or unsaturated forms thereof and/or seco-, nor- or homo-derivatives thereof:



Formula II

wherein, as valence and stability permit,

R_2 , R_3 , R_4 , and R_5 , independently for each occurrence, ~~are absent or~~ represent one or more substitutions to the ring to which each is attached, selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, sugar, carbamate, carbonate, or $-(CH_2)_m-R_8$;

R_4 and R_5 , independently for each occurrence, are absent or represent one or more substitutions to the ring to which each is attached, selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, sugar, carbamate, carbonate, or $-(CH_2)_m-R_8$;

R_6 , R_7 , and R'_7 , are absent or represent, independently, halogen, alkyl, alkenyl, alkynyl, aryl, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amine, imine, amide, phosphoryl, phosphonate, phosphine, carbonyl, carboxyl, carboxamide, anhydride, silyl, ether, thioether, alkylsulfonyl, arylsulfonyl, selenoether, ketone, aldehyde, ester, or $-(CH_2)_m-R_8$, and

either R_6 and R_7 , or R_7 and R'_7 , taken together, form a substituted or unsubstituted ring or polycycle, ~~and~~ which includes a tertiary amine in the atoms which make up the ring, wherein, if the ring is formed by R_7 and R'_7 , the tertiary amine contained therein is

substituted by an alkyl substituted with a group selected from aryl, aralkyl, heteroaryl, heteroaralkyl, amide, acylamino, carbonyl, ester, carbamate, urea, ketone, sulfonamide, carbocyclyl, heterocyclyl, polycyclyl, ether, halogen, alkenyl, and alkynyl;

R₈ represents an aryl, a cycloalkyl, a cycloalkenyl, a heterocycle, or a polycycle;

X represents O or S; and

m is an integer in the range 0 to 8 inclusive;

or a pharmaceutically acceptable salt thereof.

4. (original) The compound of claim 3, wherein:

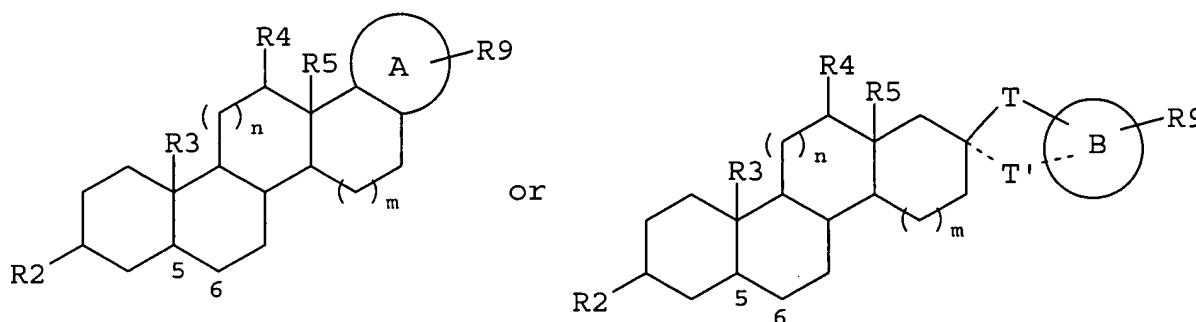
R₂ represents =O, sugar, carbamate, ester, carbonate, or alkoxy;

R₃, for each occurrence, is an -OH, alkyl, -O-alkyl, -C(O)-alkyl, or -C(O)-R₈;

R₄, for each occurrence, is absent, or represents -OH, =O, alkyl, -O-alkyl, -C(O)-alkyl, or -C(O)-R₈; and

R₅, for each occurrence, is absent, or represents -OH, =O, or alkyl.

5. (currently amended) A compound represented in the general formula (III), or unsaturated forms thereof and/or seco-, nor- or homo-derivatives thereof:



Formula III

wherein, as valence and stability permit,

R₂[[,]] and R₃, ~~R₄~~, and ~~R₅~~, independently for each occurrence, ~~are absent or~~ represent one or more substitutions to the ring to which each is attached, selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxy, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls,

carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, sugar, carbamate, carbonate, or $-(CH_2)_m-R_8$;

R_4 and R_5 , independently for each occurrence, are absent or represent one or more substitutions to the ring to which each is attached, selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, $=O$, $=S$, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, sugar, carbamate, carbonate, or $-(CH_2)_m-R_8$;

R_8 represents an aryl, a cycloalkyl, a cycloalkenyl, a heterocycle, or a polycycle;

A and B represent monocyclic or polycyclic groups;

T represents an alkyl, an aminoalkyl, a carboxyl, an ester, an amide, ether or amine linkage of 1-10 bond lengths;

T' is absent, or represents an alkyl, an aminoalkyl, a carboxyl, an ester, an amide, ether or amine linkage of 1-3 bond lengths, wherein if T and T' are both present, T and T' taken together with the ring B form a covalently closed ring of 5-8 ring atoms;

R_9 is absent or, independently for each occurrence, represents one or more substitutions to the ring to which it is attached, selected from halogen, alkyl, alkenyl, alkynyl, aryl, hydroxyl, $=O$, $=S$, alkoxyl, silyloxy, amino, nitro, thiol, amine, imine, amide, phosphoryl, phosphonate, phosphine, carbonyl, carboxyl, carboxamide, anhydride, silyl, ether, thioether, alkylsulfonyl, arylsulfonyl, selenoether, ketone, aldehyde, ester, or $-(CH_2)_m-R_8$; and

n and m are, independently, zero, 1 or 2;

with the proviso that A, or T, T', and B, taken together, include at least one tertiary amine;

wherein the tertiary amine is substituted by an alkyl substituted with a group selected from aryl, aralkyl, heteroaryl, heteroaralkyl, amide, acylamino, carbonyl, ester, carbamate, urea, ketone, sulfonamide, carbocyclyl, heterocyclyl, polycyclyl, ether, halogen, alkenyl, and alkynyl;

or a pharmaceutically acceptable salt thereof.

6. (original) The compound of claim 5, wherein:

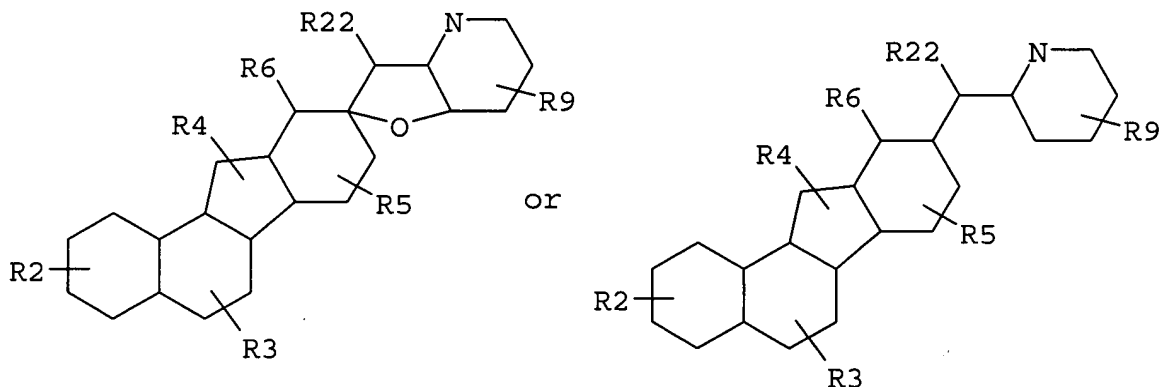
R_2 represents =O, sugar, carbamate, ester, carbonate, or alkoxy;

R_3 , for each occurrence, is an -OH, alkyl, -O-alkyl, -C(O)-alkyl, or -C(O)- R_8 ;

R_4 , for each occurrence, is absent, or represents -OH, =O, alkyl, -O-alkyl, -C(O)-alkyl, or -C(O)- R_8 ; and

R_5 , for each occurrence, is absent, or represents -OH, =O, or alkyl.

7. (currently amended) A compound represented in the general formula (IV), or unsaturated forms thereof and/or seco-, nor- or homo-derivatives thereof:



Formula IV

wherein, as valence and stability permit,

R_2 [[,]] and R_3 , R_4 , ~~and~~ R_5 , independently for each occurrence, ~~are absent or~~ represent one or more substitutions to the ring to which each is attached, selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxy, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, or $-(CH_2)_m-R_8$;

R_4 and R_5 , independently for each occurrence, are absent or represent one or more substitutions to the ring to which each is attached, selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxy, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides,

anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, sugar, carbamate, carbonate, or $-(CH_2)_m-R_8$;

R_6 is absent or represents, independently, halogen, alkyl, alkenyl, alkynyl, aryl, hydroxyl, $=O$, $=S$, alkoxyl, silyloxy, amino, nitro, thiol, amine, imine, amide, phosphoryl, phosphonate, phosphine, carbonyl, carboxyl, carboxamide, anhydride, silyl, ether, thioether, alkylsulfonyl, arylsulfonyl, selenoether, ketone, aldehyde, ester, or $-(CH_2)_m-R_8$;

R_8 represents an aryl, a cycloalkyl, a cycloalkenyl, a heterocycle, or a polycycle;

R_9 is absent or, independently for each occurrence, represents one or more substitutions to the ring to which it is attached, selected from halogen, alkyl, alkenyl, alkynyl, aryl, hydroxyl, $=O$, $=S$, alkoxyl, silyloxy, amino, nitro, thiol, amine, imine, amide, phosphoryl, phosphonate, phosphine, carbonyl, carboxyl, carboxamide, anhydride, silyl, ether, thioether, alkylsulfonyl, arylsulfonyl, selenoether, ketone, aldehyde, ester, or $-(CH_2)_m-R_8$;

R_{22} is absent or represents an alkyl, an alkoxyl or $-OH$; and

m is an integer in the range 0 to 8 inclusive,

wherein at least one occurrence of R_9 is bound to N, thereby forming a tertiary amine, and this occurrence of R_9 is an alkyl substituted with a group selected from aryl, aralkyl, heteroaryl, heteroaralkyl, amide, acylamino, carbonyl, ester, carbamate, urea, ketone, sulfonamide, carbocyclyl, heterocyclyl, polycyclyl, ether, halogen, alkenyl, and alkynyl; or a pharmaceutically acceptable salt thereof.

8. (original) The compound of claim 7, wherein:

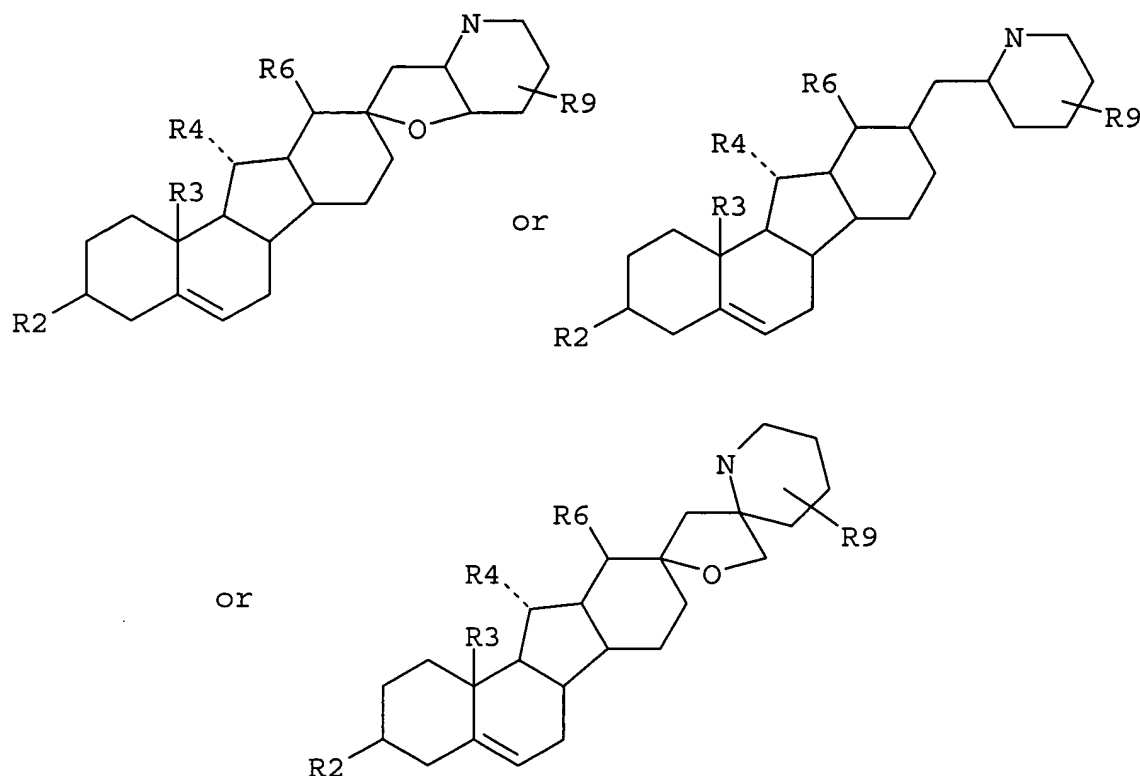
R_2 represents $=O$, sugar, carbamate, ester, carbonate, or alkoxy;

R_3 , for each occurrence, is an $-OH$, alkyl, $-O$ -alkyl, $-C(O)$ -alkyl, or $-C(O)-R_8$;

R_4 , for each occurrence, is absent, or represents $-OH$, $=O$, alkyl, $-O$ -alkyl, $-C(O)$ -alkyl, or $-C(O)-R_8$; and

R_5 , for each occurrence, is absent, or represents $-OH$, $=O$, or alkyl.

9. (currently amended) A compound represented in the general formula (V) or unsaturated forms thereof and/or seco-, nor- or homo-derivatives thereof:

Formula V

wherein, as valence and stability permit,

R₂[[,]] and R₃, and R₄, independently for each occurrence, ~~are absent or~~ represent one or more substitutions to the ring to which each is attached, selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, or $-(CH_2)_m-R_8$;

R₄ is absent or represents one or more substitutions to the ring to which each is attached, selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, sugar, carbamate, carbonate, or $-(CH_2)_m-R_8$;

R₆ is absent or represents halogen, alkyl, alkenyl, alkynyl, aryl, hydroxyl, =O, =S, alkoxy, silyloxy, amino, nitro, thiol, amine, imine, amide, phosphoryl, phosphonate, phosphine, carbonyl, carboxyl, carboxamide, anhydride, silyl, ether, thioether, alkylsulfonyl, arylsulfonyl, selenoether, ketone, aldehyde, ester, or -(CH₂)_m-R₈;

R₈ represents an aryl, a cycloalkyl, a cycloalkenyl, a heterocycle, or a polycycle;

R₉ is absent or, independently for each occurrence, represents one or more substitutions to the ring to which it is attached, selected from halogen, alkyl, alkenyl, alkynyl, aryl, hydroxyl, =O, =S, alkoxy, silyloxy, amino, nitro, thiol, amine, imine, amide, phosphoryl, phosphonate, phosphine, carbonyl, carboxyl, carboxamide, anhydride, silyl, ether, thioether, alkylsulfonyl, arylsulfonyl, selenoether, ketone, aldehyde, ester, or -(CH₂)_m-R₈; and

m is an integer in the range 0 to 8 inclusive,

wherein at least one occurrence of R₉ is attached to N, thereby forming a tertiary amine, and this occurrence of R₉ is an alkyl substituted with a group selected from aryl, aralkyl, heteroaryl, heteroaralkyl, amide, acylamino, carbonyl, ester, carbamate, urea, ketone, sulfonamide, carbocyclyl, heterocyclyl, polycyclyl, ketone, ether, halogen, alkenyl, and alkynyl;

or a pharmaceutically acceptable salt thereof.

10. (currently amended) The compound of claim 9, wherein:

R₂ represents =O, sugar, carbamate, ester, carbonate, or alkoxy;

R₃, for each occurrence, is an -OH, alkyl, -O-alkyl, -C(O)-alkyl, or -C(O)-R₈; and

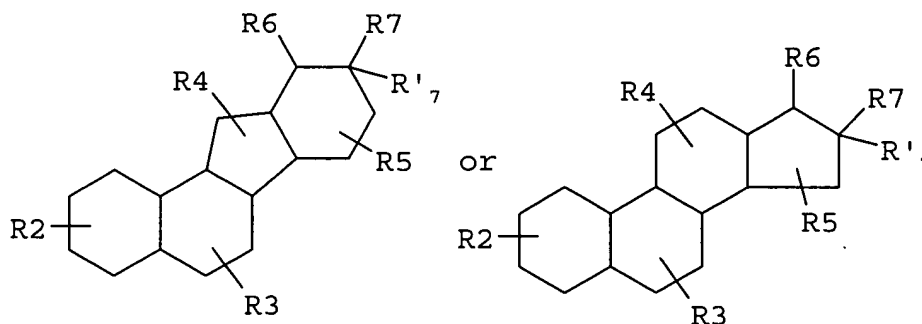
R₄, for each occurrence, is absent, or represents -OH, =O, alkyl, -O-alkyl, -C(O)-alkyl, or -C(O)-R₈; and

~~R₅, for each occurrence, is absent, or represents -OH, =O, or alkyl.~~

11. (withdrawn) A method for treating basal cell carcinoma, comprising administering to a patient a compound of any of claims 1-10.

12. (withdrawn) The method of claim 11, wherein the compound is administered locally to a tumor.

13. (withdrawn) A method for regulating differentiation or proliferation of a cell, comprising administering to a patient a compound of any of claims 1-10.
14. (withdrawn) A method for controlling the growth or development of pancreatic tissue, comprising contacting the tissue with a compound of any of claims 1-10.
15. (withdrawn) A method for treating medulloblastoma, comprising administering to a patient a compound of any of claims 1-10.
16. (withdrawn) The method of claim 15, wherein the compound is administered locally to a tumor.
17. (withdrawn) A method for treating a hyperproliferative disorder, comprising administering to a patient a compound of any of claims 1-10.
18. (withdrawn) The method of claim 17, wherein the compound is administered topically.
19. (withdrawn) The method of claim 17, wherein the compound is administered locally.
20. (original) A pharmaceutical preparation comprising a compound of any of claims 1-10 and a pharmaceutically acceptable excipient.
21. (withdrawn) A method for inhibiting *hedgehog* signaling or counteracting a *ptc* loss-of-function phenotype or a *smoothened* gain-of-function phenotype, comprising contacting the cell with a steroidal alkaloid represented in the general formulas (I), or unsaturated forms thereof and/or seco-, nor- or homo-derivatives thereof:

Formula I

wherein, as valence and stability permit,

R_2 , R_3 , R_4 , and R_5 , independently for each occurrence, are absent or represent one or more

substitutions to the ring to which each is attached, selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, sugar, carbamate, carbonate, or $-(CH_2)_m-R_8$;

R_6 , R_7 , and R'_7 , are absent or represent, independently, halogen, alkyl, alkenyl, alkynyl, aryl, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amine, imine, amide, phosphoryl, phosphonate, phosphine, carbonyl, carboxyl, carboxamide, anhydride, silyl, ether, thioether, alkylsulfonyl, arylsulfonyl, selenoether, ketone, aldehyde, ester, or $-(CH_2)_m-R_8$, and

either R_6 and R_7 , or R_7 and R'_7 , taken together, form a substituted or unsubstituted ring or polycycle, which includes a tertiary amine in the atoms which make up the ring, wherein, if the ring is formed by R_7 and R'_7 , the tertiary amine contained therein is substituted by an alkyl substituted with a group selected from aryl, aralkyl, heteroaryl, heteroaralkyl, amide, acylamino, carbonyl, ester, carbamate, urea, ketone, sulfonamide, carbocyclyl, heterocyclyl, polycyclyl, ether, halogen, alkenyl, and alkynyl;

R_8 represents an aryl, a cycloalkyl, a cycloalkenyl, a heterocycle, or a polycycle; and

m is an integer in the range 0 to 8 inclusive.

22. (withdrawn) The method of claim 21, wherein:

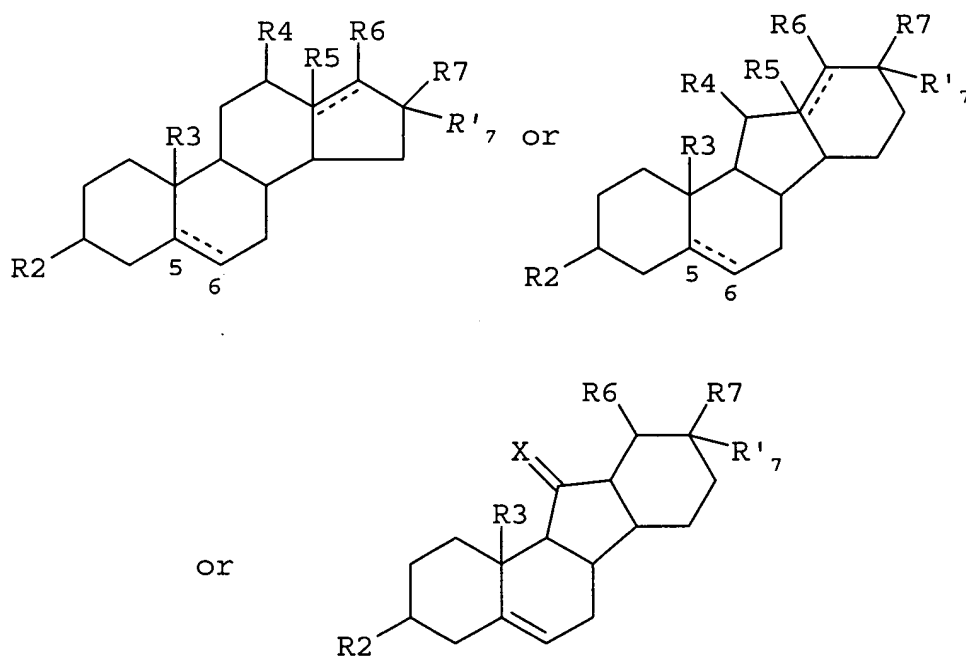
R₂ represents =O, sugar, carbamate, ester, carbonate, or alkoxy;

R₃, for each occurrence, is an -OH, alkyl, -O-alkyl, -C(O)-alkyl, or -C(O)-R₈;

R₄, for each occurrence, is absent, or represents -OH, =O, alkyl, -O-alkyl, -C(O)-alkyl, or -C(O)-R₈; and

R₅, for each occurrence, is absent, or represents -OH, =O, or alkyl.

23. (withdrawn) A method for inhibiting *hedgehog* signaling or counteracting a *ptc* loss-of-function phenotype or a *smoothened* gain-of-function phenotype, comprising contacting the cell with a steroidal alkaloid represented in the general formula (II), or unsaturated forms thereof and/or seco-, nor- or homo-derivatives thereof:



Formula II

wherein, as valence and stability permit,

R₂, R₃, R₄, and R₅, independently for each occurrence, are absent or represent one or more

substitutions to the ring to which each is attached, selected from hydrogen, halogens,

alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxy, silyloxy, amino, nitro, thiol,

amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls,

carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, sugar, carbamate, carbonate, or $-(CH_2)_m-R_8$; R_6 , R_7 , and R'_7 , are absent or represent, independently, halogen, alkyl, alkenyl, alkynyl, aryl, hydroxyl, $=O$, $=S$, alkoxyl, silyloxy, amino, nitro, thiol, amine, imine, amide, phosphoryl, phosphonate, phosphine, carbonyl, carboxyl, carboxamide, anhydride, silyl, ether, thioether, alkylsulfonyl, arylsulfonyl, selenoether, ketone, aldehyde, ester, or $-(CH_2)_m-R_8$, and

either R_6 and R_7 , or R_7 and R'_7 , taken together, form a substituted or unsubstituted ring or polycycle, which includes a tertiary amine in the atoms which make up the ring, wherein, if the ring is formed by R_7 and R'_7 , the tertiary amine contained therein is substituted by an alkyl substituted with a group selected from aryl, aralkyl, heteroaryl, heteroaralkyl, amide, acylamino, carbonyl, ester, carbamate, urea, ketone, sulfonamide, carbocyclyl, heterocyclyl, polycyclyl, ether, halogen, alkenyl, and alkynyl;

R_8 represents an aryl, a cycloalkyl, a cycloalkenyl, a heterocycle, or a polycycle;

X represents O or S; and

m is an integer in the range 0 to 8 inclusive.

24. (withdrawn) The method of claim 23, wherein:

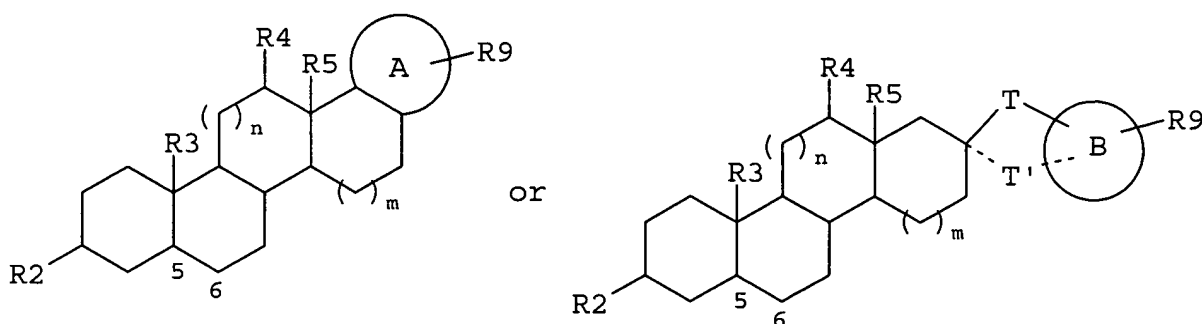
R_2 represents $=O$, sugar, carbamate, ester, carbonate, or alkoxy;

R_3 , for each occurrence, is an $-OH$, alkyl, $-O$ -alkyl, $-C(O)$ -alkyl, or $-C(O)-R_8$;

R_4 , for each occurrence, is absent, or represents $-OH$, $=O$, alkyl, $-O$ -alkyl, $-C(O)$ -alkyl, or $-C(O)-R_8$; and

R_5 , for each occurrence, is absent, or represents $-OH$, $=O$, or alkyl.

25. (withdrawn) A method for inhibiting *hedgehog* signaling or counteracting a *ptc* loss-of-function phenotype or a *smoothened* gain-of-function phenotype, comprising contacting the cell with a steroidal alkaloid represented in the general formula (III), or unsaturated forms thereof and/or seco-, nor- or homo-derivatives thereof:

Formula III

wherein, as valence and stability permit,

R_2 , R_3 , R_4 , and R_5 , independently for each occurrence, are absent or represent one or more substitutions to the ring to which each is attached, selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxy, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, sugar, carbamate, carbonate, or $-(CH_2)_m-R_8$;

R_8 represents an aryl, a cycloalkyl, a cycloalkenyl, a heterocycle, or a polycycle;

A and B represent monocyclic or polycyclic groups;

T represents an alkyl, an aminoalkyl, a carboxyl, an ester, an amide, ether or amine linkage of 1-10 bond lengths;

T' is absent, or represents an alkyl, an aminoalkyl, a carboxyl, an ester, an amide, ether or amine linkage of 1-3 bond lengths, wherein if T and T' are both present, T and T' taken together with the ring B form a covalently closed ring of 5-8 ring atoms;

R_9 is absent or, independently for each occurrence, represents one or more substitutions to the ring to which it is attached, selected from halogen, alkyl, alkenyl, alkynyl, aryl, hydroxyl, =O, =S, alkoxy, silyloxy, amino, nitro, thiol, amine, imine, amide, phosphoryl, phosphonate, phosphine, carbonyl, carboxyl, carboxamide, anhydride, silyl, ether, thioether, alkylsulfonyl, arylsulfonyl, selenoether, ketone, aldehyde, ester, or $-(CH_2)_m-R_8$;

n and m are, independently, zero, 1 or 2;

with the proviso that A, or T, T', and B, taken together, include at least one tertiary amine;

wherein the tertiary amine is substituted by an alkyl substituted with a group selected from aryl, aralkyl, heteroaryl, heteroaralkyl, amide, acylamino, carbonyl, ester, carbamate, urea, ketone, sulfonamide, carbocyclyl, heterocyclyl, polycyclyl, ether, halogen, alkenyl, and alkynyl.

26. (withdrawn) The method of claim 25, wherein:

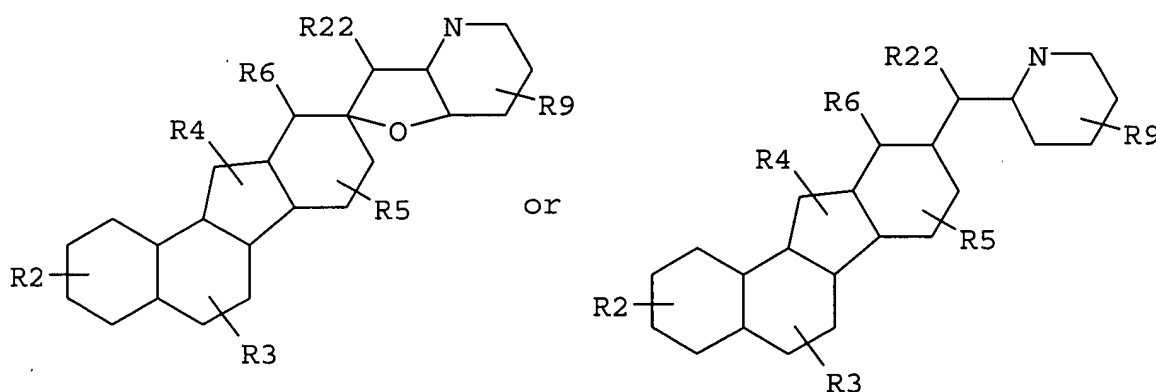
R₂ represents =O, sugar, carbamate, ester, carbonate, or alkoxy;

R₃, for each occurrence, is an -OH, alkyl, -O-alkyl, -C(O)-alkyl, or -C(O)-R₈;

R₄, for each occurrence, is absent, or represents -OH, =O, alkyl, -O-alkyl, -C(O)-alkyl, or -C(O)-R₈; and

R₅, for each occurrence, is absent, or represents -OH, =O, or alkyl.

27. (withdrawn) A method for inhibiting *hedgehog* signaling or counteracting a *ptc* loss-of-function phenotype or a *smoothened* gain-of-function phenotype, comprising contacting the cell with a steroidal alkaloid represented in the general formula (IV), or unsaturated forms thereof and/or seco-, nor- or homo-derivatives thereof:



Formula IV

wherein, as valence and stability permit,

R₂, R₃, R₄, and R₅, independently for each occurrence, are absent or represent one or more substitutions to the ring to which each is attached, selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls,

carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, or $-(CH_2)_m-R_8$;

R_6 is absent or represents, independently, halogen, alkyl, alkenyl, alkynyl, aryl, hydroxyl, $=O$, $=S$, alkoxyl, silyloxy, amino, nitro, thiol, amine, imine, amide, phosphoryl, phosphonate, phosphine, carbonyl, carboxyl, carboxamide, anhydride, silyl, ether, thioether, alkylsulfonyl, arylsulfonyl, selenoether, ketone, aldehyde, ester, or $-(CH_2)_m-R_8$;

R_8 represents an aryl, a cycloalkyl, a cycloalkenyl, a heterocycle, or a polycycle;

R_9 is absent or, independently for each occurrence, represents one or more substitutions to the ring to which it is attached, selected from halogen, alkyl, alkenyl, alkynyl, aryl, hydroxyl, $=O$, $=S$, alkoxyl, silyloxy, amino, nitro, thiol, amine, imine, amide, phosphoryl, phosphonate, phosphine, carbonyl, carboxyl, carboxamide, anhydride, silyl, ether, thioether, alkylsulfonyl, arylsulfonyl, selenoether, ketone, aldehyde, ester, or $-(CH_2)_m-R_8$;

R_{22} is absent or represents an alkyl, an alkoxyl or $-OH$; and

m is an integer in the range 0 to 8 inclusive,

wherein at least one occurrence of R_9 is bound to N, thereby forming a tertiary amine, and this occurrence of R_9 is an alkyl substituted with a group selected from aryl, aralkyl, heteroaryl, heteroaralkyl, amide, acylamino, carbonyl, ester, carbamate, urea, ketone, sulfonamide, carbocyclyl, heterocyclyl, polycyclyl, ether, halogen, alkenyl, and alkynyl.

28. (withdrawn) The method of claim 27, wherein:

R_2 represents $=O$, sugar, carbamate, ester, carbonate, or alkoxy;

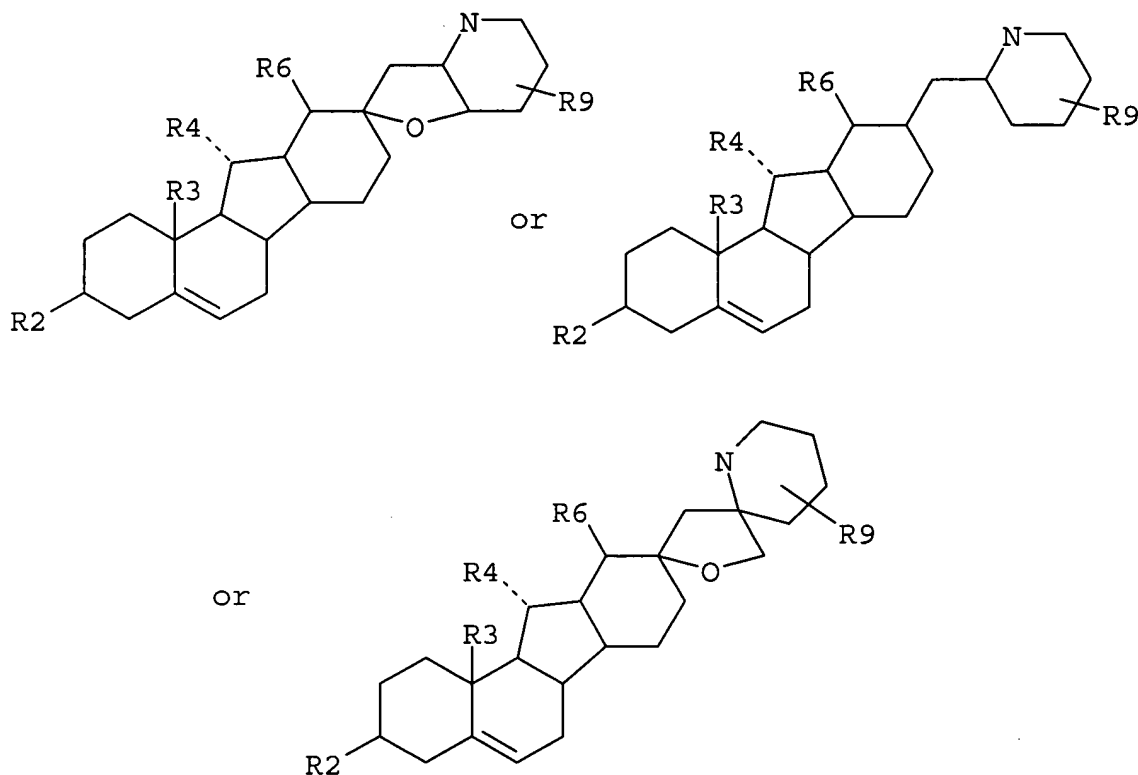
R_3 , for each occurrence, is an $-OH$, alkyl, $-O$ -alkyl, $-C(O)$ -alkyl, or $-C(O)-R_8$;

R_4 , for each occurrence, is absent, or represents $-OH$, $=O$, alkyl, $-O$ -alkyl, $-C(O)$ -alkyl, or $-C(O)-R_8$; and

R_5 , for each occurrence, is absent, or represents $-OH$, $=O$, or alkyl.

29. (withdrawn) A method for inhibiting *hedgehog* signaling or counteracting a *ptc* loss-of-function phenotype or a *smoothened* gain-of-function phenotype, comprising contacting the cell

with a steroidal alkaloid represented in the general formula (V) or unsaturated forms thereof and/or seco-, nor- or homo-derivatives thereof:



Formula V

wherein, as valence and stability permit,

R₂, R₃, and R₄, independently for each occurrence, are absent or represent one or more

substitutions to the ring to which each is attached, selected from hydrogen, halogens, alkyls, alkenyls, alkynyls, aryls, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amines, imines, amides, phosphoryls, phosphonates, phosphines, carbonyls, carboxyls, carboxamides, anhydrides, silyls, ethers, thioethers, alkylsulfonyls, arylsulfonyls, selenoethers, ketones, aldehydes, esters, or $-(CH_2)_m-R_8$;

R₆ is absent or represents halogen, alkyl, alkenyl, alkynyl, aryl, hydroxyl, =O, =S, alkoxyl, silyloxy, amino, nitro, thiol, amine, imine, amide, phosphoryl, phosphonate, phosphine, carbonyl, carboxyl, carboxamide, anhydride, silyl, ether, thioether, alkylsulfonyl, arylsulfonyl, selenoether, ketone, aldehyde, ester, or $-(CH_2)_m-R_8$;

R₈ represents an aryl, a cycloalkyl, a cycloalkenyl, a heterocycle, or a polycycle;

R₉ is absent or, independently for each occurrence, represents one or more substitutions to the ring to which it is attached, selected from halogen, alkyl, alkenyl, alkynyl, aryl, hydroxyl, =O, =S, alkoxy, silyloxy, amino, nitro, thiol, amine, imine, amide, phosphoryl, phosphonate, phosphine, carbonyl, carboxyl, carboxamide, anhydride, silyl, ether, thioether, alkylsulfonyl, arylsulfonyl, selenoether, ketone, aldehyde, ester, or -(CH₂)_m-R₈; and

m is an integer in the range 0 to 8 inclusive,

wherein at least one occurrence of R₉ is attached to N, thereby forming a tertiary amine, and this occurrence of R₉ is an alkyl substituted with a group selected from aryl, aralkyl, heteroaryl, heteroaralkyl, amide, acylamino, carbonyl, ester, carbamate, urea, ketone, sulfonamide, carbocyclyl, heterocyclyl, polycyclyl, ether, halogen, alkenyl, and alkynyl.

30. (withdrawn) The method of claim 29, wherein:

R₂ represents =O, sugar, carbamate, ester, carbonate, or alkoxy;

R₃, for each occurrence, is an -OH, alkyl, -O-alkyl, -C(O)-alkyl, or -C(O)-R₈;

R₄, for each occurrence, is absent, or represents -OH, =O, alkyl, -O-alkyl, -C(O)-alkyl, or -C(O)-R₈; and

R₅, for each occurrence, is absent, or represents -OH, =O, or alkyl.

31. (withdrawn) The method of any of claims 21-30, wherein the tertiary amine includes a hydrophobic extraannular substituent.

32. (withdrawn) The method of claim 31, wherein the hydrophobic extraannular substituent includes an aryl, heteroaryl, carbocyclyl, heterocyclyl, or polycyclyl group.

33. (withdrawn) The method of claim 32, wherein the hydrophobic extraannular substituent includes a polycyclyl group selected from biotin, a zwitterionic complex of boron, and a steroidal polycycle.

34. (withdrawn) The method of claim 31, wherein the hydrophobic substituent consists essentially of a combination of alkyl, amido, acylamino, ketone, ester, ether, halogen, alkenyl, alkynyl, aryl, aralkyl, urea, or similar functional groups, including between 5 and 40 non-hydrogen atoms.
35. (withdrawn) The method of any of claims 21-30, wherein the steroidal alkaloid inhibits *ptc* loss-of-function or *smoothened* gain-of-function mediated signal transduction with an ED₅₀ of 1 mM or less.
36. (withdrawn) The method of any of claims 21-30, wherein the steroidal alkaloid inhibits *ptc* loss-of-function or *smoothened* gain-of-function mediated signal transduction with an ED₅₀ of 1 μ M or less.
37. (withdrawn) The method of any of claims 21-30, wherein the steroidal alkaloid inhibits *ptc* loss-of-function or *smoothened* gain-of-function mediated signal transduction with an ED₅₀ of 1 nM or less.
38. (withdrawn) The method of any of claims 21-30, wherein the cell is contacted with the steroidal alkaloid *in vitro*.
39. (withdrawn) The method of any of claims 21-30, wherein the cell is contacted with the steroidal alkaloid *in vivo*.
40. (withdrawn) The method of any of claims 21-30, wherein the steroidal alkaloid is administered as part of a therapeutic or cosmetic application.
41. (withdrawn) The method of claim 40, wherein the therapeutic or cosmetic application is selected from the group consisting of regulation of neural tissues, bone and cartilage formation and repair, regulation of spermatogenesis, regulation of smooth muscle, regulation of lung, liver and other organs arising from the primitive gut, regulation of hematopoietic function, and regulation of skin and hair growth.

42. (cancelled)